

CLAIMS

1. A color conversion member comprising a transparent substrate, two or more types of color conversion layers, and a color filter layer,

said color conversion layers functioning to convert incident lights for respective pixels to outgoing lights of colors different from the incident lights, said two or more types of color conversion layers being arranged on said transparent substrate,

said color filter layer being provided on the transparent substrate side of any one of the color conversion layers or between said any one of the color conversion layers and the color conversion layers adjacent to said any one the color conversion layers.

2. The color conversion member according to claim 1, wherein, in addition to the color filter layer provided on the transparent substrate side of said any one of the color conversion layers or between said any one of the color conversion layers and the color conversion layers adjacent to said any one the color conversion layers, a color filter layer is provided on the transparent substrate side of at least one type of the other color conversion layers.

3. The color conversion member according to claim 1, wherein a black matrix having openings is further provided on the transparent substrate and said color conversion layers are provided in the openings.

4. The color conversion member according to claim 1, wherein said two or more types of the color conversion layers comprise a first color conversion layer for converting incident light of blue color and/or green color to outgoing light of red color, a second color conversion layer for converting said incident light to outgoing light of green color, and a light transparent layer for transmitting said incident light as such, and

a color filter layer for a red color is provided on the transparent substrate side of the first color conversion layer or between the first color conversion layer and other color conversion layers adjacent to the first color conversion layer.

5. The color conversion member according to claim 4, wherein a color filter layer for a green color is further provided on the light transparent layer side of the second color conversion layer.

6. The color conversion member according to any one of claims 1 to 5, which is used in an EL display.

7. An EL display comprising the color conversion member according to any one of claims 1 to 5 and a luminescent part comprising a transparent electrode layer, an EL layer, and a backside electrode layer, said luminescent part being provided on the color conversion layers so as to correspond to each of the color conversion layers.

8. The EL display according to claim 7, wherein said luminescent part is provided through an overcoat on said color conversion layers in said color conversion member.

9. A process for producing a color conversion member comprising the steps of:

determining at least one type of color conversion layer to be excluded as the color conversion layer, not to be first formed on a transparent substrate, from two or more types of color conversion layers, and forming and arranging the color conversion layers, except for the excluded color conversion layer, on the transparent substrate,

said color conversion layers functioning to convert incident lights for respective pixels to outgoing lights of colors different from the incident lights;

forming a concave region in which said one type of excluded color conversion layer is to be formed;

applying a composition for color filter layer formation on the transparent substrate in its part, where the concave region has been formed, so that the composition is applied on the bottom and wall surface of the concave region, and curing the composition; and

filling a composition for the formation of the color conversion layer into the concave region, curing the composition, and polishing the surface of the cured products of both the compositions.

10. The process according to claim 9, which further comprises the step of, in the formation of the concave region, previously forming a color filter layer on the transparent substrate side of at least one of the formed two or more types of the color conversion layers.

11. The process according to claim 9, wherein, prior to the formation of the two or more types of color conversion layers or the color filter layer, a black matrix having openings is formed.

12. The process according to claim 9, wherein means for applying the composition for the formation of the color filter layer onto the bottom and wall surface of the concave region and solidifying the composition is a photolithographic method utilizing a photomask which acts only on an area somewhat larger than the width of the concave region.

13. A process for producing an EL display, comprising the steps of:

producing the color conversion member by the process according to any one of claims 9 to 12;

optionally forming an overcoat on the color conversion layer; and

further forming corresponding transparent electrode layer, EL layer, and backside electrode layer on each of the color conversion layers.